

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Previously Presented) A high-strength steel pipe rockbolt comprising an expansive rockbolt main body made from a shaped pipe having one or more concavities extending along an axial direction, the shaped pipe being made by forming a high-strength steel sheet having a thickness of 1.8–2.3 mm, a tensile strength of 490–640 N/mm² and an elongation of at least 20%.

2. (Original) The high-strength steel pipe rockbolt as defined in Claim 1, wherein the shaped pipe is coated with a Zn, Zn-Al or Zn-Al-Mg plating layer.

3. (Previously Presented) The high-strength steel pipe rockbolt as defined in Claim 1, wherein the shaped pipe made by forming the high-strength steel sheet has a tensile strength of 530–690 N/mm² and an elongation of at least 20%.

4. (Previously Presented) A method of manufacturing a steel pipe rockbolt involving the steps of:

(1) processing a steel sheet of 1.8–2.3 mm in thickness with a tensile strength of 490–640 N/mm² and an elongation of at least 20% into a welded pipe of 50–55 mm in outer diameter;

(2) roll-forming the welded pipe to a shaped pipe of 34.0–38.0 mm in outer diameter having a first end and a second end and one or more concavities extending along an axial direction;

(3) sizing the shaped pipe to a predetermined length;

(4) swaging the first end and the second end of the sized shaped pipe;

(5) hermetically fixing sleeves to the first end and the second end of the

shaped pipe, the first end being a top to be inserted into a rockbolt-setting hole in a bedrock or ground, and the second end being a site for introduction of a pressurized fluid; and

(6) drilling the sleeve at the second end for formation of a pressure fluid inlet leading to an interior of the shaped pipe.

5. (New) The high-strength steel pipe rockbolt as defined in Claim 2, wherein the shaped pipe is coated with a Zn, Zn-Al or Zn-Al-Mg plating layer.

6. (New) The high-strength steel pipe rockbolt as defined in Claim 1, wherein the shaped pipe is coated with a Zn-Al-Mg plating layer containing 0.05-10% of Mg and 4-22% of Al.

7. (New) The high-strength steel pipe rockbolt as defined in Claim 6, wherein the Zn-Al-Mg plating layer further contains 0.001-0.1% of Ti and 0.0005-0.045% of B.

8. (New) The high-strength steel pipe rockbolt as defined in Claim 6, wherein the Zn-Al-Mg plating layer further contains 0.005-2.0% of at least one selected from the group consisting of rare earth metals, Y, Zr and Si.

9. (New) The high-strength steel pipe rockbolt as defined in Claim 7, wherein the Zn-Al-Mg plating layer further contains 0.005-2.0% of at least one selected from the group consisting of rare earth metals, Y, Zr and Si.